

ABSTRACT OF THE DISCLOSURE

It is an object of the invention to provide a control device for a synchronous motor which can detect the position of a magnetic pole from a zero speed without requiring a signal generator.

The invention provides a control device for a synchronous motor which drives the synchronous motor through a voltage-operated PWM inverter and controls a torque and a speed of the motor, including means (6-3) for causing a PWM carrier signal to have an arbitrary phase difference between two phases such as UV, VW or WU in three phases of U, V and W, means (11) for extracting a high frequency voltage and a high frequency current which are thus generated from a detecting voltage or a command voltage and a detecting current, and means (12) for estimating a position of a magnetic flux or a position of a magnetic pole by using the high frequency voltage and the high frequency current which are extracted.